

Alan L. Stone

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PERSONAL:

US Citizen. Married.

EDUCATION:

Ph.D. in Physics, August 1999
Louisiana State University, Baton Rouge, LA 70803
Thesis: *Measurement of Inclusive Charm Production in Two-Photon Collisions at LEP*
Thesis Advisor: Prof. Roger R. McNeil

B.A. in Physics and Astronomy, minor in French, May 1993
Boston University, Boston, MA 02215

EMPLOYMENT EXPERIENCE:

Research Associate	Louisiana Tech University	February 2000 - Present
Research Associate	Louisiana State University	August 1999 – January 2000
Research/Teaching Assistant	Louisiana State University	June 1993 – July 1999
Tutor	Boston University	January 1993 – May 1993
Research Assistant	Boston University	June 1992 – May 1993
Assistant Manager	Bruegger's Bagel Bakery	August 1988 – May 1993

COMPUTING EXPERIENCE:

Platforms and Applications

UNIX/LINUX, Windows 98/NT/2000/XP, Office 2000, ROOT.

Languages

Proficient in C++, C, Fortran, HTML and Latex. Familiar with Python, Java and XML.

RESEARCH EXPERIENCE:

February 2000 – Present (Research Associate, Louisiana Tech, D0 Experiment)

D0 Deputy Run Coordinator (July 2002 – Present)

1) Supervision of the day to day control room operations of the D0 Experiment.

(a) Coordinate data taking priorities with commissioning activities, maintenance and repairs. Special runs, access to the D0 collision hall, trigger commissioning, upgrades to online systems (hardware & software) are constantly competing for resources and beam.

(b) Submit daily and standard run plan instructions to the shift crew. Procedures need to be clear and concise, so everyone will make the effort to read and follow them.

(c) Produce Store, Run and Safety checklists for the D0 Shift Captains & DAQ Shifters. Checklists enforce a precise order of steps during the critical period of physics data taking.

(d) Teach new collaborators how to be an efficient D0 Control Room Shifter. I spend from one-third to one-half of my time continually showing people how the D0 Experiment works.

(e) Write and validate much of the web-based documentation. I maintain and update several web pages used by the D0 Run II Operations and the D0 Collaboration as a whole:

- i. D0 Run Plan: Updated frequently to assist D0 shifters on guidelines, triggers, prescales, shifts, magnet configurations, special runs and monitoring.
- ii. D0 Control Room Procedures: Instructions that change infrequently. Procedures are needed to minimize conflicts and ambiguity.
- iii. DAQ Shifters: Documentation, Logbook, How-to Guide, Glossary and Tutorials.
- iv. Shift Captain: Responsibilities, Documentation and Control Room forms
- v. Run IIa Operations: Primary portal for day to day D0 Operations.
- vi. All Experimenters' Mtg: Weekly D0 and Tevatron status reports
- vii. D0 Shift Calendar: Local administrator to scheduling all D0 Control Room & Expert shifts.
- viii. Run II Stores, Run II Bests, Physics Runs, Shifter Tutorials, Downtime and Deadtime, Operations Mtgs, DAQ Task Force, Special Runs and Current Events: Collection of web pages which inform and inspire.

(f) Schedule Captain and DAQ Shifts for 50-60 individuals each month. I implemented a rigorous but very effective scheduling system for the DAQ Shifters in Aug 2002. The DAQ Shifters perform better, morale is higher, and the scheduling is fair and predictable. I also do most of the recruiting. The Captain shifts are filled mainly by senior physicists with less flexible schedules. This job is more difficult as it requires juggling the requests and vetoes of forty people each month.

(g) Perform Shift bookkeeping for the collaboration. I have done this on a quarterly basis since Q2 2002. I presented my first statistics on the D0 shift distribution at the Institutional Board meeting in April 2002.

2) Liason between D0, the Tevatron accelerator division and the other Tevatron experiments. I support the D0 Run Coordinator in this job, and represent D0 at frequent beams division meetings.

(a) Serve as Acting Run Coordinator. For about 10% of my time, I step in for the D0 Run Coordinator while he is away on vacation or attending a conference.

(b) Present D0 performance reports at the All Experimenters' meetings. This meeting is attended by all the senior Fermilab physicists, including the Fermilab director. I have given about one-third of the 10-15 minute presentations on the D0 status during my tenure.

(d) Serve as D0 Controlled Access Coordinator. This responsibility comes with a lot of overhead. At this time, only twelve other people at D0 have the necessary experience and are permitted by the Tevatron to coordinate a controlled access to the D0 collision hall. We need this privilege to make short accesses to our detector to do jobs such as replacing a power supply, electronics cards, etc.

(e) Improve Safety and Radiation Training. I help enforce safety and radiological worker procedures at D0 which is mandated by the Environmental Safety & Health department at Fermilab. I have increased the fraction of properly trained individuals in the D0 Control Room by over 50% during my tenure and minimized the loss of thermo-luminescent dosimeter (TLD) badges, pocket dosimeters and rate meters. I continue to train new people on how perform a radiation survey in the D0 Collision Hall in preparation for a supervised access.

3) Detailed understanding of the D0 Experiment: Sub-detectors, triggers, data acquisition, online controls and monitoring, offline reconstruction, etc. I assist experts in resolving problems in a timely fashion. I have pursued two parallel goals: increasing data taking efficiency and improving data quality.

(a) Run weekly detector operations meetings. All major sub-detector, trigger and online systems send a representative to this meeting to discuss activities, problems, requests and milestones. This is also the time to review procedures and policy changes. I give a short presentation on the D0 Data Taking status, include information from the accelerator and outline the plan for the following week.

(b) Submit weekly electronic run reports to the general collaboration. I post weekly performance status - Del vs Rec Lumi, physics events, new milestones, best runs - to D0 News, the most widely and regularly read web page by the D0 Collaboration. I also compile this information in a spreadsheet available to the public: <http://www-d0.fnal.gov/~alstone/D0Work/RUN/>

(c) Give quarterly 30 minute plenary talks on the D0 Operations, Detector and Data Taking Status at D0 collaboration meetings.

(d) Organize a series of Shifter Tutorials. The primary goal is to bridge the information gap between the experts who have built, commissioned and/or run a system and the less experienced shifters. The experts not only speak and answer questions but also provide a user-friendly electronic copy of their presentation to be used in future shifter training.

Member of D0 Electroweak Physics Group (June 2001 – Present)

(a) Physics interests include W and Z asymmetry, diboson cross sections and anomalous coupling.

(b) Physics representative on the Offline Resources Board (Sept 2002 – Present).

(c) Deputy trigger board physics representative (June – Oct 2001). I continue to attend TB meetings as the Deputy Run Coordinator.

Offline Reconstruction Software: Missing Transverse Energy (March 2000 – May 2002)

Primary author of the offline missing transverse energy packages: missingET and met_analyze. Worked in the D0 framework using d0reco (from raw data) and reco_analyze (reconstructed data). Created separate analyze package to disentangle Jet and MET objects. Added the functionality to measure MET using towers (sum of calorimeter cell layers at a fixed phi and eta) and rings (sum of calorimeter towers at a fixed eta) and correction for muon ionization in the calorimeter.

Inter-Cryostat Detector (ICD) Co-Project Leader (February 2000 – Present)

- a) Installation and commissioning of most of the hardware, cables and electronics.
 - i. Low voltage distribution system with new cables, power supply and fan-out boxes.
 - ii. High voltage (HV) distribution system with new cables, sixteen new fan-out boxes, extensions and couplers.
 - iii. Cosmic ray test stand characterization and quality control of ICD scintillators, fiber cables and photomultiplier tubes (PMTs).
 - iv. Specification and procurement of cables, PMTs, and various electronic parts
 - v. LED calibration system with new cables and electronics.
 - vi. Electronics drawers with new preamps, HV divider bases, motherboards, PMT socket assemblies and various front- and rear-bulkhead connectors.
 - vii. Recovery and rerouting of irreplaceable Run I HV and signal cables.
- b) Measurement of ICD timing with respect to the calorimeter using data and scope probes.
- c) Identification and validation of ICD channel map from hardware & cables to calorimeter electronics readout to detector physics address.
- d) Modification of the geometrical size and representation of the ICD for Run II in the D0 GEANT Simulation package to account for the trapezoidal and non-cylindrical shape.
- e) All documentation for the channel readout, LED and HV controls & monitoring and the low voltage safety review for the ICD.

Calorimeter Commissioning (June – November 2001)

- a) Control room shifts (later DAQ, currently Captain).
- b) Studied real data to determine the source of noise in the switched capacitor arrays (SCAs) and calorimeter preamps.
- c) Integration of the ICD into the calorimeter readout which included finding uncommon problems with missing channels, timing, gains, SCA daughter cards and triggering.

Co-Leader of the Data Acquisition (DAQ) Experts (June 2001 – July 2002)

- a) Scheduling of revolving group of 15-20 D0 members per month.
- b) Training and supervising of the DAQ Shifters.
- c) Writing the documentation, maintaining the web page, and keeping current with a constantly evolving DAQ system.
- d) Jointly running of DAQ Shifters' meetings and giving presentations on weekly activities.
- e) On-call DAQ troubleshooter.

August 1999 – January 2000 (Research Associate, Louisiana State, L3 Detector)

Analyzed L3 detector data ($S^{**}(1/2) = 183 - 202$ GeV) which was not available for my thesis. Studied the contributions to charm production from both direct and resolved processes which are the main source of heavy flavor quarks in two-photon collisions. Showed that the high energy data could not be described by Monte Carlo predictions.

Links to my presentations and web pages: <http://www-d0.fnal.gov/~alstone>

July 1996 – July 1999 (Research Assistant, Louisiana State, L3 Detector)

Member of the L3 Collaboration on LEP at CERN.

- a) Developed a method to identify low momentum electrons in order to tag charm production in two-photon collisions, combining calorimetry and tracking measurements to isolate the electron signature from a very large hadronic background. This method was later extended to tag beauty production for the first time in two-photon collisions.
- b) Measured the inclusive charm cross-section in two-photon collisions for the first time at center of mass energies greater than the Z mass.
- c) Showed the measurements were consistent with QCD predictions. The data required a significant gluon content in the photon. The direct process ($\gamma\gamma \rightarrow c\bar{c}$) was insufficient to describe the data. The cross sections and event distributions required contributions from resolved processes ($\gamma\text{gluon} \rightarrow c\bar{c}$).
- d) Calibration of the scintillation counter subdetector. Scintillators were used to measure time-of flight of muons, to filter cosmic rays in the trigger system and to provide a back-up trigger for high multiplicity events. Tested and replaced PMTs.

PRESENTATIONS:

- 1. “D0 Status: 04/28 -05/04/03”, All Experimenters’ Mtg., Fermilab, Batavia, IL, 5 May 2003.
- 2. “Recent Results on Electroweak and Related Physics at D0”, Deep Inelastic Scattering Workshop XI, St. Petersburg, Russia, 24 April 2003.
- 3. “D0 Status: 03/24 -03/30/03”, All Experimenters’ Mtg., Fermilab, Batavia, IL, 31 March 2003.
- 4. “D0 Status: 03/17 -03/23/03”, All Experimenters’ Mtg., Fermilab, Batavia, IL, 24 March 2003.
- 5. “D0 Status: 03/03 -03/09/03”, All Experimenters’ Mtg., Fermilab, Batavia, IL, 10 March 2003.
- 6. “D0 Detector and Data Taking Status”, Plenary Session, D0 Collaboration Mtg., Fermilab, Batavia, IL, 12 February 2003.
- 7. “D0 Status: 01/06 -01/12/03”, All Experimenters’ Mtg., Fermilab, Batavia, IL, 13 January 2003.
- 8. “D0 Status: 12/30/02 -01/05/03”, All Experimenters’ Mtg., Fermilab, Batavia, IL, 6 January 2003.
- 9. “D0 Status: 12/09 -12/15/02”, All Experimenters’ Mtg., Fermilab, Batavia, IL, 16 December 2002.
- 10. “The Run Report”, All DZero Mtg., Fermilab, Batavia, IL, 15 November 2002.
- 11. “D0 Status: 11/04 -11/10/02”, All Experimenters’ Mtg., Fermilab, Batavia, IL, 11 November 2002.
- 12. “D0 Data Collection Status and Plans”, Plenary Session, D0 Collaboration Mtg., Fermilab, Batavia, IL, 9 October 2002.

13. "D0 Status: 10/07 -10/13/02", All Experimenters' Mtg., Fermilab, Batavia, IL, 14 October 2002.
14. "D0 Status: 9/30 -10/06/02", All Experimenters' Mtg., Fermilab, Batavia, IL, 7 October 2002.
15. "Status of D0 Operations", Plenary Session, D0 Workshop 2002, Norman, OK, 8 July 2002.
16. "Electroweak Physics Prospects in Run II with the D0 Detector at the Tevatron Collider", DPF 2002 Meeting, Williamsburg, VA, 24 May 2002.
17. "D0 Status: 3/11 -3/18/02", All Experimenters' Mtg., Fermilab, Batavia, IL, 18 March 2002.
18. "The Inter-Cryostat Detector Project", All DZero Mtg., Fermilab, Batavia, IL, 7 September 2001.
19. "Separation of Direct and Resolved Processes in Inclusive Charm Production in Two-Photon Collisions", Louisiana Tech Seminar, Ruston, LA, December 1999.
20. "Heavy Flavor Production in Two-Photon Collisions Measured by the L3 Experiment", Cornell Seminar, Ithaca, NY, October 1999.
21. "Measurement of Inclusive Charm Production in Two-Photon Collisions at LEP", APS Centennial Mtg., Atlanta, GA, March 1999.
22. "Preliminary Cross Section Measurement of $E^+ E^- \rightarrow E^+ E^- c\bar{c} + X$ at LEP with the L3 Detector", Joint APS/AAPT Mtg., Columbus, OH, April 1998.
23. "Inclusive Charm Production in Two-Photon Collisions at LEP with the L3 Detector", QCD Moriond Conference, Les Arcs, France, March 1998.
24. "Electron Identification to Tag Charm Production in Two-Photon Processes", L3 General Mtg., Toledo, Spain, May 1997.

PUBLICATIONS:

1. **SEARCH FOR THE PRODUCTION OF SINGLE SLEPTONS THROUGH R-PARITY VIOLATION IN P ANTI-P COLLISIONS AT $\sqrt{s} = 1.8$ -TEV.**
By D0 Collaboration (V.M. Abazov *et al.*). Jul 2002. 7pp.
Published in **Phys.Rev.Lett.89:261801,2002.**
2. **T ANTI-T PRODUCTION CROSS-SECTION IN P ANTI-P COLLISIONS AT $\sqrt{s} = 1.8$ -TEV.**
By D0 Collaboration (V.M. Abazov *et al.*). May 2002. 62pp.
Published in **Phys.Rev.D67:012004,2003.**
3. **SEARCH FOR MSUGRA IN SINGLE ELECTRON EVENTS WITH JETS AND LARGE MISSING TRANSVERSE ENERGY IN P ANTI-P COLLISIONS AT $\sqrt{s} = 1.8$ -TEV.**
By D0 Collaboration (V.M. Abazov *et al.*). May 2002. 24pp.
Published in **Phys.Rev.D66:112001,2002.**
4. **IMPROVED W BOSON MASS MEASUREMENT WITH THE D0 DETECTOR.**
By D0 Collaboration (V.M. Abazov *et al.*). Apr 2002. 20pp.
Published in **Phys.Rev.D66:012001,2002.**

5. **A DIRECT MEASUREMENT OF W BOSON DECAY WIDTH.**
By D0 Collaboration (V.M. Abazov *et al.*). Mar 2002. 12pp.
Published in **Phys.Rev.D66:032008,2002.**
6. **SEARCH FOR R-PARITY VIOLATING SUPERSYMMETRY IN DIMUON AND FOUR JETS CHANNEL.**
By D0 Collaboration (V.M. Abazov *et al.*). Nov 2001. 10pp.
Published in **Phys.Rev.Lett.89:171801,2002**
7. **SEARCH FOR LEPTOQUARK PAIRS DECAYING TO NEUTRINO NEUTRINO + JETS IN P ANTI-P COLLISIONS AT $S^{**}(1/2)=1.8$ -TEV.**
By D0 Collaboration (V.M. Abazov *et al.*). Nov 2001. 12pp.
Published in **Phys.Rev.Lett.88:191801,2002**
8. **THE INCLUSIVE JET CROSS-SECTION IN P ANTI-P COLLISIONS AT $S^{**}(1/2) = 1.8$ -TEV USING THE K-PERPENDICULAR ALGORITHM.**
By D0 Collaboration (V.M. Abazov *et al.*). Sep 2001. 7pp.
Published in **Phys.Lett.B525:211-218,2002.**
9. **SUBJET MULTIPLICITY OF GLUON AND QUARK JETS RECONSTRUCTED WITH THE K-PERPENDICULAR ALGORITHM IN P ANTI-P COLLISIONS.**
By D0 Collaboration (V.M. Abazov *et al.*). Aug 2001. 43pp.
Published in **Phys.Rev.D65:052008,2002.**
10. **A SEARCH FOR THE SCALAR TOP QUARK IN P ANTI-P COLLISIONS AT $S^{**}(1/2) = 1.8$ -TEV.**
By D0 Collaboration (V.M. Abazov *et al.*). Aug 2001. 7pp.
Published in **Phys.Rev.Lett.88:171802,2002.**
11. **MEASUREMENT OF THE RATIO OF DIFFERENTIAL CROSS-SECTIONS FOR W AND Z BOSON PRODUCTION AS A FUNCTION OF TRANSVERSE MOMENTUM IN P ANTI-P COLLISIONS AT $S^{**}(1/2) = 1.8$ -TEV.**
By D0 Collaboration (V.M. Abazov *et al.*). Jul 2001. 10pp.
Published in **Phys.Lett.B517:299-308,2001.**
12. **SEARCH FOR SINGLE TOP QUARK PRODUCTION AT D0 USING NEURAL NETWORKS.**
By D0 Collaboration (V.M. Abazov *et al.*). Jun 2001. 16pp.
Published in **Phys.Lett.B517:282-294,2001.**
13. **SEARCH FOR NEW PHYSICS USING QUAERO: A GENERAL INTERFACE TO D0 EVENT DATA.**
By D0 Collaboration (V.M. Abazov *et al.*). Jun 2001. 7pp.
Published in **Phys.Rev.Lett.87:231801,2001.**
14. **SEARCH FOR FIRST GENERATION SCALAR AND VECTOR LEPTOQUARKS.**
By D0 Collaboration (V.M. Abazov *et al.*). May 2001. 40pp.
Published in **Phys.Rev.D64:092004,2001.**
15. **TOTAL CROSS-SECTION IN GAMMA GAMMA COLLISIONS AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Jan 2001. 17pp.
Published in **Phys.Lett.B519:33-45,2001.**

16. **STUDY OF THE $E^+ E^- \rightarrow Z \text{ GAMMA-GAMMA} \rightarrow Q \text{ ANTI-Q GAMMA-GAMMA}$ PROCESS AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Jan 2001. 15pp.
Published in **Phys.Lett.B505:47-58,2001.**
17. **MEASUREMENT OF THE TAU BRANCHING FRACTIONS INTO LEPTONS.**
By L3 Collaboration (M. Acciarri *et al.*). CERN-EP-2001-007, Jan 2001. 18pp.
Published in **Phys.Lett.B507:47-60,2001.**
18. **MEASUREMENT OF THE CHARM PRODUCTION CROSS-SECTION IN GAMMA-GAMMA COLLISIONS AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Dec 2000. 15pp.
Published in **Phys.Lett.B514:19-28,2001.**
19. **SEARCH FOR THE STANDARD MODEL HIGGS BOSON IN $E^+ E^-$ COLLISIONS AT $S^{**}(1/2)$ UP TO 202-GEV.**
By L3 Collaboration (M. Acciarri *et al.*). Nov 2000. 16pp.
Published in **Phys.Lett.B508:225-236,2001.**
20. **SEARCH FOR NEUTRAL HIGGS BOSONS OF THE MINIMAL SUPERSYMMETRIC STANDARD MODEL IN $E^+ E^-$ INTERACTIONS AT $S^{**}(1/2) = 192\text{-GEV} - 202\text{-GEV}$.**
By L3 Collaboration (M. Acciarri *et al.*). Nov 2000. 16pp.
Published in **Phys.Lett.B503:21-33,2001.**
21. **MEASUREMENTS OF THE CROSS-SECTIONS FOR OPEN CHARM AND BEAUTY PRODUCTION IN GAMMA-GAMMA COLLISIONS AT $S^{**}(1/2) = 189\text{-GEV}$ TO 202-GEV.**
By L3 Collaboration (M. Acciarri *et al.*). Nov 2000. 17pp.
Published in **Phys.Lett.B503:10-20,2001.**
22. **SEARCH FOR EXCITED LEPTONS IN $E^+ E^-$ INTERACTIONS AT $S^{**}(1/2) = 192\text{-GEV}$ TO 202-GEV.**
By L3 Collaboration (M. Acciarri *et al.*). Nov 2000. 17pp.
Published in **Phys.Lett.B502:37-50,2001.**
23. **SEARCH FOR R-PARITY VIOLATING DECAYS OF SUPERSYMMETRIC PARTICLES IN $E^+ E^-$ COLLISIONS AT $S^{**}(1/2) = 189\text{-GEV}$.**
By L3 Collaboration (M. Acciarri *et al.*). Oct 2000. 41pp.
Published in **Eur.Phys.J.C19:397-414,2001.**
24. **HIGGS CANDIDATES IN $E^+ E^-$ INTERACTIONS AT $S^{**}(1/2) = 206.6\text{-GEV}$.**
By L3 Collaboration (M. Acciarri *et al.*). Nov 2000. 11pp.
Published in **Phys.Lett.B495:18-25,2000.**
25. **$K_0(S)K_0(S)$ FINAL STATE IN TWO PHOTON COLLISIONS AND IMPLICATIONS FOR GLUEBALLS.**
By L3 Collaboration (M. Acciarri *et al.*). Nov 2000. 16pp.
Published in **Phys.Lett.B501:173-182,2001.**
26. **LIGHT RESONANCES IN $K_0(S) K^+ \pi^-$ AND $\eta \pi^+ \pi^-$ FINAL STATES IN GAMMA-GAMMA COLLISIONS AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Oct 2000. 17pp.
Published in **Phys.Lett.B501:1-11,2001.**

27. **STUDY OF Z BOSON PAIR PRODUCTION IN E+ E- INTERACTIONS AT $S^{**}(1/2) = 192\text{-GEV} - 202\text{-GEV}$.**
By L3 Collaboration (M. Acciarri *et al.*). Sep 2000. 19pp.
Published in **Phys.Lett.B497:23-38,2001.**
28. **SEARCH FOR CHARGED HIGGS BOSONS IN E+ E- COLLISIONS AT CENTER CENTER-OF-MASS ENERGIES UP TO 202-GEV.**
By L3 Collaboration (M. Acciarri *et al.*). Aug 2000. 15pp.
Published in **Phys.Lett.B496:34-42,2000.**
29. **MEASUREMENT OF THE W PAIR PRODUCTION CROSS-SECTION AND W DECAY BRANCHING FRACTIONS IN E+ E- INTERACTIONS AT $S^{**}(1/2) = 189\text{-GEV}$.**
By L3 Collaboration (M. Acciarri *et al.*). Jul 2000. 22pp.
Published in **Phys.Lett.B496:19-33,2000.**
30. **MEASUREMENT OF BOSE-EINSTEIN CORRELATIONS IN E+ E- \rightarrow W+ W- AT $S^{**}(1/2)$ APPROXIMATELY = 189-GEV.**
By L3 Collaboration (M. Acciarri *et al.*). Jun 2000. 20pp.
Published in **Phys.Lett.B493:233-248,2000.**
31. **SEARCH FOR ANOMALOUS COUPLINGS IN THE HIGGS SECTOR AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Jul 2000. 18pp.
Published in **Phys.Lett.B489:102-114,2000.**
32. **MEASUREMENT OF THE W+ W- GAMMA CROSS-SECTION AND DIRECT LIMITS ON ANOMALOUS QUARTIC GAUGE BOSON COUPLINGS AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Jul 2000. 14pp.
Published in **Phys.Lett.B490:187-195,2000.**
33. **SEARCH FOR A HIGGS BOSON DECAYING INTO TWO PHOTONS IN E+ E- INTERACTIONS AT $S^{**}(1/2) = 189\text{-GEV}$.**
By L3 Collaboration (M. Acciarri *et al.*). Jul 2000. 15pp.
Published in **Phys.Lett.B489:115-124,2000.**
34. **DETERMINATION OF GAMMA / Z INTERFERENCE IN E+ E- ANNIHILATION AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Jun 2000. 13pp.
Published in **Phys.Lett.B489:93-101,2000.**
35. **PRODUCTION OF SINGLE W BOSONS AT $S^{**}(1/2) = 189\text{-GEV}$ AND MEASUREMENT OF W W GAMMA GAUGE COUPLINGS.**
By L3 Collaboration (M. Acciarri *et al.*). May 2000. 17pp.
Published in **Phys.Lett.B487:229-240,2000.**
36. **QCD STUDIES IN E+ E- ANNIHILATION FROM 30-GEV TO 189-GEV.**
By L3 Collaboration (M. Acciarri *et al.*). May 2000. 23pp.
Published in **Phys.Lett.B489:65-80,2000.**
37. **SEARCH FOR MANIFESTATIONS OF NEW PHYSICS IN FERMION PAIR PRODUCTION AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). May 2000. 18pp.
Published in **Phys.Lett.B489:81-92,2000.**

38. **SEARCH FOR ANOMALOUS $Z Z$ GAMMA AND Z GAMMA-GAMMA COUPLINGS IN THE PROCESS $E^+ E^- \rightarrow Z$ GAMMA AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Apr 2000. 17pp.
Published in **Phys.Lett.B489:55-64,2000.**
39. **MEASUREMENTS OF THE B ANTI- B PRODUCTION CROSS-SECTION AND FORWARD BACKWARD ASYMMETRY AT CENTER-OF-MASS ENERGIES ABOVE THE Z POLE AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Apr 2000. 22pp.
Published in **Phys.Lett.B485:71-84,2000.**
40. **SEARCH FOR AN INVISIBLY DECAYING HIGGS BOSON IN $E^+ E^-$ COLLISIONS AT $\sqrt{s} = 183\text{-GEV} - 189\text{-GEV}$.**
By L3 Collaboration (M. Acciarri *et al.*). Mar 2000. 15pp.
Published in **Phys.Lett.B485:85-94,2000.**
41. **MEASUREMENT OF THE PHOTON STRUCTURE FUNCTION AT HIGH Q^2 AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Feb 2000. 23pp.
Published in **Phys.Lett.B483:373-386,2000.**
42. **MEASUREMENT OF THE LIFETIME OF THE TAU LEPTON.**
By L3 Collaboration (M. Acciarri *et al.*). Mar 2000. 16pp.
Published in **Phys.Lett.B479:67-78,2000.**
43. **INCLUSIVE Σ^+ AND Σ^0 PRODUCTION IN HADRONIC Z DECAYS.**
By L3 Collaboration (M. Acciarri *et al.*). Feb 2000. 17pp.
Published in **Phys.Lett.B479:79-88,2000.**
44. **MEASUREMENTS OF CROSS-SECTIONS AND FORWARD BACKWARD ASYMMETRIES AT THE Z RESONANCE AND DETERMINATION OF ELECTROWEAK PARAMETERS.**
By L3 Collaboration (M. Acciarri *et al.*). Feb 2000. 97pp.
Published in **Eur.Phys.J.C16:1-40,2000.**
45. **SEARCH FOR CHARGINOS WITH A SMALL MASS DIFFERENCE WITH THE LIGHTEST SUPERSYMMETRIC PARTICLE AT $\sqrt{s} = 189\text{-GEV}$.**
By L3 Collaboration (M. Acciarri *et al.*). Jan 2000. 19pp.
Published in **Phys.Lett.B482:31-42,2000.**
46. **MEASUREMENT OF THE $E^+ E^- \rightarrow Z$ GAMMA GAMMA CROSS-SECTION AND DETERMINATION OF QUARTIC GAUGE BOSON COUPLINGS AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Jan 2000. 14pp.
Published in **Phys.Lett.B478:39-49,2000.**
47. **HARD PHOTON PRODUCTION AND TESTS OF QED AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Dec 1999. 12pp.
Published in **Phys.Lett.B475:198-205,2000.**
48. **MEASUREMENT OF THE RUNNING OF THE FINE STRUCTURE CONSTANT.**
By L3 Collaboration (M. Acciarri *et al.*). Jan 2000. 13pp.
Published in **Phys.Lett.B476:40-48,2000.**

49. **MEASUREMENT OF HADRON AND LEPTON PAIR PRODUCTION AT 130-GEV LESS THAN $S^{**}(1/2)$ LESS THAN 189-GEV AT LEP.**
By L3 Collaboration (M. Acciarri *et al.*). Dec 1999. 24pp.
Published in **Phys.Lett.B479:101-117,2000.**
50. **DIRECT OBSERVATION OF LONGITUDINALLY POLARIZED W^{+-} BOSONS.**
By L3 Collaboration (M. Acciarri *et al.*). Nov 1999. 17pp.
Published in **Phys.Lett.B474:194-204,2000.**
51. **MEASUREMENT OF THE PROBABILITY OF GLUON SPLITTING INTO CHARMED QUARKS IN HADRONIC Z DECAYS.**
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